

Energy Efficiency Question 6: *How does Michigan compare to other states / provinces / countries with respect to energy efficiency standards? Are the standards correlated with the cost of energy or excess generating capacity in such jurisdictions? How does Michigan's efficiency standard compare given our cost of energy and generating capacity?*

Executive Summary

1. Twenty states including Michigan have adopted Energy Efficiency Resource Standards (EERS)
2. State EERS policies vary widely based on a number of key criteria. The policy targets cannot be compared without examining details of the standards
3. No studies were identified discussing the correlation between EERS standards and cost of energy or excess generating capacity
4. The 2012 State Energy Efficiency Scorecard published by the American Council for an Energy-Efficient Economy (ACEEE) ranks Michigan #12 out of 51 jurisdictions on the policy and program efforts and recognizes Michigan among the most improved states in implementing Energy Efficiency Resource Standards

1. Twenty states including Michigan have adopted Energy Efficiency Resource Standards (EERS)

Energy Efficiency Resource Standards (EERS) establish specific, long-term targets for energy savings that utilities or non-utility program administrators must meet through customer energy efficiency programs. An EERS can apply to either electricity or natural gas utilities, or both, depending on the state, and can be adopted through either legislation or regulation.

As of February 2013, twenty states¹ including Michigan have fully-funded policies in place that establish specific energy savings targets that utilities or non-utility program administrators must meet through customer energy efficiency programs. State EERS policies are summarized in Appendix I.

¹ Wisconsin is excluded because the state does not provide the funding increase for EERS programs; Nevada, North Carolina, and Connecticut are excluded because the states combine energy efficiency and state RPS but do not have a separate, multi-year energy efficiency policy; Maine, Oregon and Texas are excluded because none of the states have a legally binding energy saving targets



Definition of targeted reduction in electricity use: EERS policies define reductions in one of two different ways: annual or cumulative reductions. An annual reduction specifies the new energy savings required in a given year from investments made in that year (e.g., 1% annual reduction in Michigan) , whereas a cumulative reduction sets the total amount of reductions to be achieved in a given year from all policies implemented up through that year (e.g., 10% cumulative reduction by 2020 in New Mexico).

The quantity reductions are easy to compare across states. The percentage reductions, however, are not because they are defined relative to baselines that vary across states. Some states use a fixed baseline (e.g., New Mexico's 10% cumulative reduction is applied to 2005 retail sales), and other states use a rolling baseline (e.g., Michigan's 1% annual reduction is applied to prior year's retail sales)

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Unlike fixed baselines, rolling baselines are affected by the level of compliance in prior years. Rolling baselines also introduce more uncertainty by linking required reductions to exogenous changes in energy sales resulting from the level of economic activity, weather, demographics, or other factors². As mentioned earlier, Michigan's EERS policy uses a rolling baseline: the annual percentage reduction requirement is based on prior year retail sales.

Application to natural gas sales: all the EERS states have established reduction targets on electricity sales. 11 of those EERS states, including Michigan, have established reduction targets on natural gas sales.

Application of EERS to Electricity and Natural Gas Sales

Application to both electricity and natural gas sales	Application to electricity sales only
Arizona	Florida
Arkansas	Hawaii
California	Indiana
Colorado	Maryland
Illinois	New Mexico
Iowa	Ohio
Massachusetts	Pennsylvania
Michigan	Vermont
Minnesota	Washington
New York	
Rhode Island	

Percent of sales covered by policies: state EERSs also vary in terms of which sales are covered by the policy, and relatedly, which entities are responsible for complying with the policy. The following table demonstrates the difference in policy coverage and obligated entities in the state EERS. Policy coverage on retail sales ranges from 57% to 100%. Michigan is one of seven states that have 100% of retail sales covered by EERS policies.

² K. Palmer, S. Grausz, B. Beasley and T. Brennan. Putting a Floor on Energy Savings: Comparing State Energy Efficiency Resource Standards. Feb 2012. <http://www.rff.org/RFF/Documents/RFF-DP-12-11.pdf>. Accessed March 19, 2013

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Policy Coverage and Obligated Entities

State	% of State Sales Covered		Obligated Entities	Notes
	Description	Share		
Arizona	All except excluded	99%	All utilities	Excludes utilities < \$5,000,000 in annual revenue and co-op utilities with less than 25% of customers in AZ, all co-op utilities comply with separate standard (75% of normal standard)
Arkansas	IOUs	61%	IOUs	
California	IOUs	74%	IOUs	
Colorado	IOUs	57%	IOUs	
Florida	All except excluded	84%	All utilities	Only utilities > 2000 GWH annual sales
Hawaii	All	100%	All utilities	
Iowa	IOUs	74%	IOUs	
Illinois	IOUs except excluded	89%	IOUs, DCEO	Only IOUs > 100,000 customers in IL, IOUs and Department of Commerce and Economic Opportunity (DCEO) responsible for 75% and 25% of obligation respectively
Indiana	All	100%	All utilities	
Maryland	All	100%	All utilities, other entities	
Massachusetts	IOUs	86%	IOUs	
Michigan	All	100%	All utilities	88.9% (IOUs), 7.8% (municipal utilities), and 3.4% (co-ops) of obligation
Minnesota	All	100%	All utilities	
New Mexico	IOUs	67%	IOUs	Co-op utilities outside the jurisdiction of the Public Utility Commission (PUC) but required to develop voluntary targets
New York	All	100%	IOUs, NYSEDA, other entities	Obligation shared between multiple entities; share of obligations determined by the Public Service Commission (PSC)
Ohio	IOUs	88%	IOUs	
Pennsylvania	IOUs except excluded	96%	IOUs	IOUs > 100,000 customers
Rhode Island	All	100%	All utilities	Excludes the Pascoag Utility District and Block Island Power Company
Vermont	All except excluded	94%	Efficiency Vermont	Excludes the City of Burlington

Notes:

Covered Sales Share is the percent of 2009 electricity sales covered under the EERS divided by the total state electricity sales.

Arizona requires co-op utilities to only achieve 75% of the standard. We do not include this in further calculations.

Arizona allows utilities to use peak demand reductions to meet up to 2 percentage points of their requirements in 2020. The equivalent load reduction is calculated by assuming a 50% load factor.

Source: *Putting a Floor on Energy Savings: Comparing State Energy Efficiency Resource Standards*. Feb 2012.

<http://www.rff.org/RFF/Documents/RFF-DP-12-11.pdf>. Accessed March 19, 2013

Eligible resources: EERS states generally allow a broad range of end-use efficiency programs to count toward energy efficiency requirements, including home weatherization; light bulb and appliance replacements; improvements in heating, ventilation, air conditioning systems, and many others. However, they differ on whether they include (1) combined heat and power (CHP) applications of otherwise wasted heat in electricity generation (or waste heat from other industrial or commercial processes to generate electricity), (2) reduced transmission/distribution line losses, and (3) generator efficiency upgrades. A few states including Michigan do not allow any of these additional resources in their state EERS, and other states (e.g., Arizona, Rhode Island, Florida, Massachusetts, Maryland, New York) include one or more of the additional resources in their state EERS. EERS policies are made more flexible by

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including a broader definition of eligible energy efficiency resources. Michigan's EERS is less flexible than those of the states that allow multiple additional resources.

Additional Eligible Resources for States with EERS

State	Elible Resources		
	CHP	Transmission / Distribution Savings	Generator Efficiency Savings
Arizona	X		
Arkansas		X	X
California			
Colorado			
Florida		X	X
Hawaii	X		
Iowa	X	X	X
Illinois			
Indiana			
Massachusetts	X	X	X
Maryland	X	X	
Michigan			
Minnesota	X	X	X
New Mexico			
New York	X	X	
Ohio		X	
Pennsylvania			
Rhode Island	X		
Vermont	X	X	
Washington			

Source: Putting a Floor on Energy Savings: Comparing State Energy Efficiency Resource Standards. Feb 2012.

<http://www.rff.org/RFF/Documents/RFF-DP-12-11.pdf>. Accessed March 19, 2012

Note: It is verified that Michigan does not allow CHP application in the EERS policy

In summary, state EERS targets cannot be compared without examining the details of the standards. EERS policies can take numerous forms, varying significantly based on the definition of targeted reductions, applicability to natural gas sales, percent of sales covered by policies, and eligible resources to meet EERS targets.

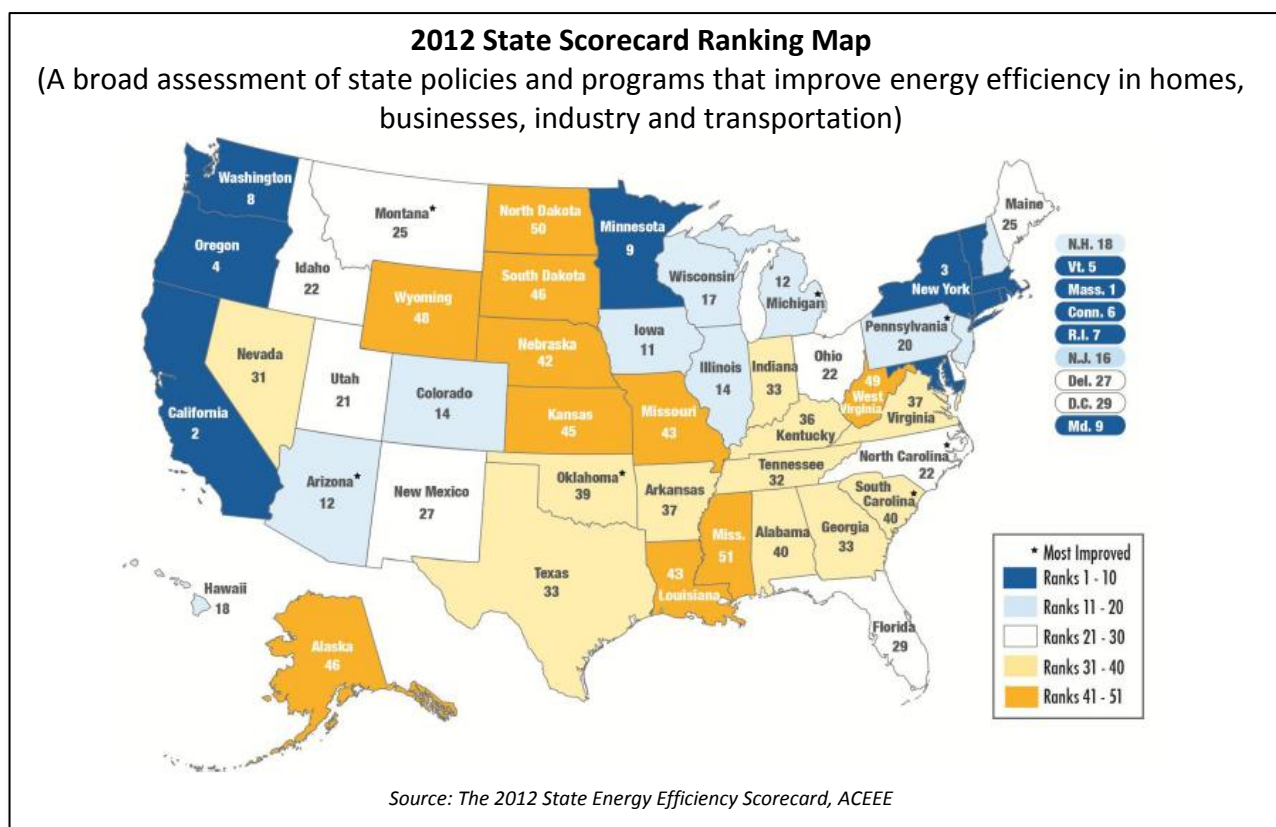
3. No studies were identified discussing the correlation between EERS standards and cost of energy or excess generating capacity

DTE did not identify any studies describing potential correlation between EERS standards and cost of energy or excess generating capacity. Some states that have higher than average electric rates do not have EERS (e.g., Connecticut, New Hampshire, New Jersey), while states that have among the lowest electric rates, such as Washington, can have an EERS standard.

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4. The 2012 State Energy Efficiency Scorecard published by the American Council for an Energy-Efficient Economy (ACEEE) ranks Michigan #12 out of 51 jurisdictions on the policy and program efforts and recognizes Michigan among the most improved states in implementing Energy Efficiency Resource Standards

The 2012 State Energy Efficiency Scorecard³ published by the American Council for an Energy-Efficient Economy (ACEEE) provides a broad assessment of state energy efficiency policies and programs among the 51 jurisdictions. Michigan is ranked 12th best out of 51 jurisdictions on the policy and program efforts. Michigan is also recognized as one of the most improved states as Michigan EERS policy has led to substantially higher energy efficiency program spending and savings. It is important to note that the Scorecard not only assesses the EERS programs but also any programs to improve energy efficiency in homes, businesses, industry, and transportation.



³ B. Foster et al. The 2012 State Energy Efficiency Scorecard. October 2012.
<http://www.aceee.org/sites/default/files/publications/researchreports/e12c.pdf>. Accessed March 19, 2013

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Appendix I State EERS Policies

EERS Policy Details

Arizona: 22% cumulative electricity savings by 2020; 6% cumulative gas savings by 2020.

Arkansas: 0.75% of 2010 electric sales reduction by 2013; 0.4% of 2010 gas sales reduction by 2013.

California: Varies by utility.

Colorado: Electricity sales and demand reduction of 5% of 2006 numbers by 2018 (statutory requirement); natural gas savings requirements vary by utility.

Connecticut: 4% of retail load (includes CHP and waste heat recovery).

Delaware: Electricity and peak demand savings equivalent to 15% of 2007 numbers by 2015; natural gas savings equivalent to 10% of 2007 natural gas consumption by 2015.

Florida: 7,842 GWh cumulative reductions from 2010-2019 (statewide goal); 3,024 MW cumulative summer peak demand reduction from 2010-2019, 1,937 MW, cumulative winter peak demand reduction from 2010-2019 (statewide goal).

Hawaii: 4,300 GWh reduction in electricity use by 2030.

Illinois: 2.0% reduction of 2008 electricity sales by 2015; 1.1% reduction of 2008 peak load demand by 2018; 8.6% cumulative natural gas savings by 2020.

Indiana: 2.0% electricity sales reduction by 2019.

Iowa: Varies by utility.

Maine: 30% reduction of electricity and natural gas sales by 2020.

Maryland: 15% reduction in per capita energy consumption by 2015, compared to 2007; 15% reduction in per capita peak demand by 2015, compared to 2007.

Massachusetts: Reduce 1,103 GWh electricity in 2012 (statewide); reduce 24.7 million therms by 2012 (statewide).

Michigan: 1.0% annual reduction of previous year retail electricity sales by 2012; 0.75% annual reduction of previous year retail natural gas sales by 2012.

Minnesota: 1.5% reduction of previous 3-year average retail electric sales by 2010; 1.5% reduction of previous 3-year average retail natural gas sales by 2010.

Missouri: 9.9% cumulative electricity savings by 2020; an additional 1.9% each year thereafter. 9% cumulative peak reduction by 2020; an additional 1% each year thereafter.

New Mexico: 10% of 2005 total retail kWh sales by 2020.

New York: 15% reduction relative to projected electricity use in 2015; gas savings of 112 Bcf annually by 2020.

Ohio: 22.0% reduction of previous 3-year average retail electricity sales by 2025.

Pennsylvania: 3% of projected June 2009 - May 2010 electricity consumption by May 31, 2013; 4.5% of measured June 2007 - May 2008 peak demand by May 31, 2013.

Rhode Island: Varies by utility.

Texas: 25% reduction in annual growth in demand 2012; 30% reduction in annual growth in demand 2013.

Vermont: 320,000 MWh electricity savings (3-year goal for 2012, 2013, 2014); summer peak kW savings: 60,800 (3-year goal for 2012, 2013, 2014).

Virginia: 10% electricity savings by 2022 relative to 2006 base sales.

Washington: Varies by utility.

Wisconsin: 2011-2014: Net annual electric energy savings of 1,816,320,000 kWh; net annual natural gas savings of 73,040,000 therms.

Note: For more details on EERS policies, see www.dsireusa.org and www.aceee.org/topics/eers.